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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/769,243	01/30/2004	Jacek Stachurski	TI-35418	8176
23494 7590 12/11/2008 TEXAS INSTRUMENTS INCORPORATED P O BOX 655474, M/S 3999 DALLAS, TX 75265				
EXAMINER				
SAINT CYR, LEONARD				
ART UNIT		PAPER NUMBER		
2626				
NOTIFICATION DATE		DELIVERY MODE		
12/11/2008		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

uspto@ti.com

Office Action Summary

Application No.

10/769,243

Applicant(s)

STACHURSKI ET AL.

Examiner

LEONARD SAINT CYR

Art Unit

2626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 August 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 2 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, and 2 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08/05/08 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/5508)
- Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 08/12/08 have been fully considered but they are not persuasive.

Applicant argues that neither Gersho nor Honda teach or suggest that the equalization filter is only applied to the harmonics recognized as voice (Amendment, pages 3 – 5)

The examiner disagrees, Honda teaches equalization filter is only applied to the harmonics recognized as voice , since disclosing "when a sound is discriminated to be a voiced sound V, the residual waveform e(n) inputted at the terminal is supplied through the switch to a phase-equalizing filter " (col.7, lines 64 – 66).

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1, and 2 are rejected under 35 USC 101 as not falling within one of the four statutory categories of invention. While the claims recite a series of steps to be performed, a statutory process under 35 USC 101 must be tied to another statutory category (such as a manufacture or a machine) or transform underlying subject matter (such as an article or material) to a different state or thing. Claims 1, and 2 appear to

recite mental steps and do not identify the apparatus that accomplishes the method steps like “determining bandpass voicing levels for each of a plurality of bands for a frame of speech using a bandpass filter” described in page 30, lines 1- 3 of the specification. Thus, claims 1, and 2 do not define a statutory process.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gersho et al., (US Patent 6,233,550), in view of Honda (US Patent 5,495,556).

As per claim 1, Gersho et al., teach a method of speech encoding, comprising:
determining bandpass voicing levels for each of a plurality of bands for a frame of speech (“for every frame, a speech classifier module classifies the speech as stationary unvoiced, steady state or transition speech”; col.13, lines 22 – 25; figs 1A, and 1B col.18, lines 17 - 21).

However Gersho et al., do not specifically disclose determining a zero-phase equalization filter for said frame; and that harmonic which fall into a band that was determined to have a voicing level below a threshold are replaced for said zero-phase equalization filter; equalization filter is only applied to the harmonics recognized as voice.

Honda teaches that in the phase equalizing-analyzing part coefficients of a phase equalizing filter for rendering the phase characteristic of the speech into a zero phase

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and reference time points of phase equalization are computed (col.4, lines 5 – 9).

When a sound is discriminated to be a voiced sound V, the residual waveform $e(n)$ inputted at the terminal is supplied through the switch to a phase-equalizing filter " (col.7, lines 64 – 66).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to render the phase characteristic of the speech into a zero phase as taught by Honda in Gersho et al., because that would help classify the speech signal (col.7, lines 42 – 45).

Gersho et al., in view of Honda do not specifically teach that harmonic which fall into a band that was determined to have a voicing level below a threshold are replaced for said zero-phase equalization filter.

However, since Gersho et al., disclose a switchable adaptive codebook may help at a vowel-consonant transition segment or for the case of classification error which classifies a harmonic frame as a transition frame (col.26, lines 22 – 25). One having ordinary skill in the art at the time the invention was made would have found it obvious to replace harmonics when the voicing level is below a threshold, because that would increase the coding robustness to classification errors (col.15, lines 30, and 31).

As per claim 2, Gersho et al., further disclose determining bandpass voicing of step (a) uses the frequency bands 0-500 Hz, 500-1000 Hz, 1000-2000 Hz, 2000-3000 Hz, and 3000-4000 Hz (see figures; figs 1A, and 1B).

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to LEONARD SAINT CYR whose telephone number is (571) 272-4247. The examiner can normally be reached on Mon- Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (571) 272-7602. The fax phone number for the organization where this application or proceeding is assigned is (571)-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or (571)-272-1000.

LS
11/24/08
/Richemond Dorvil/

Supervisory Patent Examiner, Art Unit 2626